GENDER DIFFERENCES IN EARLY CHILDHOOD READING-RELATED BEHAVIORS: EVIDENCE FROM OBSERVATION AND SURVEY OF CHILDREN'S ENGAGEMENT IN READING AND READING INTERACTIONS

by

Michelle Chestnut

A thesis submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Master of Science

in

Human Development and Social Policy

Department of Family and Consumer Studies

The University of Utah

August 2016

The University of Utah Graduate School

STATEMENT OF THESIS APPROVAL

The thesis of **Michelle Chestnut**

has been approved by the following supervisory committee members:

SeungHee Claire Son	, Chair	**5/26/2016** Date Approved
Marissa Diener	, Member	**5/26/2016** Date Approved
Cheryl Wright	, Member	**5/26/2016** Date Approved

and by **Lori Kowaleski-Jones** , Chair of

the Department of **Family and Consumer Studies**

and by David Kieda, Dean of The Graduate School.

ABSTRACT

This study seeks to identify differences between preschool-aged boys and girls in their engagement in book browsing and book reading in a public library to investigate gender differences in early literacy and reading experiences. Sixty-eight child-caregiver dyads were observed in the children's area at five branches of the Salt Lake City Public Library System. Of this sample, 35 were girls and 33 were boys. Dyads were observed at various times of day (i.e., morning, early afternoon, late afternoon, evening, and weekend). Engagement was measured through time-sampled incidences of child book browsing and book reading. Using ANCOVA, the number and percentage of observed time intervals of each reading-related behavior of children in the library were analyzed to determine gender differences after controlling for age. Additional ANCOVA was conducted to analyze parent-reported reading behaviors at home so as to compare gender differences in book access, book reading, and shared reading interactions as observed versus reported. As observed in the library, girls were more involved in interactive browsing behaviors than boys and also spent a greater percentage of time in library on both general reading and shared reading. No gender differences were observed for verbatim reading, expanding discussion, or parents responding to child's talk. Girls were engaged for a higher percentage of time intervals over time spent in library reading in describing discussion and print referencing during shared reading. For parent-reported reading behaviors at home, girls were found to be more involved in reading discussion.

TABLE OF CONTENTS

LIST OF TABLES

Tables

INTRODUCTION

Individual attitudes toward reading differ greatly according to gender (Coles & Hall, 2002; Sainsbury & Schagen, 2004). Subsequent success in and personal preferences for reading activities vary between girls and boys (Peterson & Parr, 2012). The extent to which this difference is noted between genders grows from preschool to elementary school years, with small differences in achievement and interest in early childhood increasing in disparity during grade school (Logan & Johnston, 2009). This study seeks to identify early origins of differences between preschool-aged boys and girls in their engagement in reading by observing naturalistic reading-related behaviors in the library, including book browsing and book reading.

Engagement during shared reading experiences differ between genders, as does parental provision of different types of reading discussion (Tracey & Young 2002). However, research on the influence of gender on school achievement provides conflicting findings, which makes it difficult to explicate the issue and develop appropriate interventions (Mathews, et al., 2009). This study aims to provide an understanding of gender differences in engagement in reading-related behaviors in order to contribute to the current body of research and help researchers establish early childhood reading programs that lessen the growing disparity between boys' and girls' performance on literacy related tasks (Logan & Johnston, 2009). This study tests how children's reading behaviors differ across gender by empirically observing naturalistic behaviors of girls and

boys engaging in reading-related behaviors of book selection, reading, and shared reading interactions with adults as well as by analyzing parent survey of home literacy on children's engagement in home reading and shared reading interactions.

LITERATURE REVIEW

Two areas stand out in the current body of research as key influencing factors in regard to children's reading interest and motivation: their gender and gender-related experiences during parent-child shared reading (Baroody & Diamond, 2013; Kraaykamp, 2003; Logan & Johnston, 2009). Tracey and Young (2002) found girls were more likely to engage in discussion during shared reading than boys and that parents engaged in discussion during shared reading more often with girls than with boys. Given that positive parent-child reading interactions and exposure to stimulating learning opportunities and resources improve children's reading achievement, as well as their appreciation for books and literature (Celano & Neuman, 2001; Whitehurst, et al., 1988), experiences of differential reading interactions during shared reading between boys and girls may lead to differential early literacy development. However, there is limited evidence of early gender differences in reading behaviors and experiences of reading interactions.

Gender Differences in Reading Skills

In general, boys perform more poorly on measures of writing and reading comprehension and have less positive attitudes about reading than girls (Logan & Johnston, 2009; Peterson & Parr, 2012). These differences are not only evident in the United States, but have been noted worldwide. In the United Kingdom, efforts have been

taken to improve boys' school achievement, especially in reading, and establish interventions to improve their educational opportunities. Similarly, researchers have found that New Zealand girls perform 2 school years ahead of boys on literacy-related tasks by the time they have reached ninth grade (Bourke & Adams, 2011; Peterson & Parr, 2012). Poor performance in early reading achievement leads many boys to become frustrated while reading and associate reading behaviors with negative emotions and experiences. Therefore, reading becomes an activity boys avoid, while girls are more likely to engage in reading for leisure and enjoyment (Jones, 2011).

Gender Differences in Reading Behaviors

Gender disparity in reading skills might be explained by gender differences in reading interest and reading behaviors. Studies have shown that boys are less engaged in reading than their female peers (Baroody & Diamond, 2013; De Naeghel, et al., 2012). With frequent reading contributing to multiple early literacy skills, including sight word recognition, vocabulary, reading comprehension, verbal fluency, and general knowledge (Logan & Johnston, 2009), early gender differences in reading behaviors are expected to explicate differences in reading skills.

Studies show that preschool girls engage more in literacy activities and read more often than preschool boys (Baroody & Diamond, 2013). Children's engagement and responsiveness may influence the degree to which parents include their children in high-quality reading experiences (Tracey & Young, 2002), and boys and girls may experience different extent of reading interactions, too.

Specifically, during shared reading, parents are likely to provide interactions

including extra-textual discussion of expanding and describing discussion as well as code-focused talk (De Naeghel, et al., 2012; Tracey & Young 2002). This takes place when parents build upon the child's responses about the text by expanding, rephrasing, and repeating them or when parents make prompts to the child to discuss concepts in the story further (Hindman, et al., 2006) or talk about codes, referring text and print (Evans, et al., 2000). Tracey and Young (2002) noted that the quality of parent shared reading behaviors, as measured by parent discussion during book reading, varied according to child gender with parents engaging in discussion more often with girls than with boys.

Gender differences are also noted in other reading-related behaviors. Children's reading behaviors not just at home but also at public places, like a library, could show variability. Abilock (1997) notes that boys and girls behave and use library resources differently. For example, when engaging in book browsing, "girls often work collaboratively and seek help from friends and family, while boys browse independently and are less likely to ask for help during their search" (Abilock, 1997, p. 18). Also, caregivers are less likely to involve boys in book browsing behaviors, as they generally show a lack of interest in being involved in this activity (Wason-Ellam, et al., 2004).

In this respect, children's reading and reading interactions will show key gender differences in reading. Once the evidence of gender differences in reading experiences is available, parents and teachers act accordingly so that both genders can enjoy reading and develop positive attitudes toward reading (Abilock, 1997). However, detailed evidence is not available on gender differences in specific reading behaviors. Further, a few available studies reported contradictory findings of gender differences across different data collection methods of reading behavior information (Baroody & Diamond, 2013).

Measuring Children's Reading and Reading Behaviors

Most often, researchers have examined children's reading experiences using parent-reported survey. These surveys inquire the general characteristics of home literacy, including the frequency of reading, print sources availability, and reading interactions at home (Griffin & Morrison, 1997; Melhuish, et al., 2008). These parent-reported measures have been popular in the field as they are less time consuming and have the ability to represent accumulated reading experiences of children at home. Also, the environment of clinical settings in which formal measures are often administered may make it difficult for young children to cooperate and therefore provide unrepresentative outcomes. The experience and familiarity parents have with their children makes parent-reported measures useful, especially when studying young children (Feldman, et al., 2005). But parent-report surveys are not free from biases due to social desirability or by reflecting parental expectations and beliefs. Specifically, parents were found to note gendered reading experiences, where parents reported stronger gender differences in reading than the actual children's behaviors (Baroody & Diamond, 2013).

In contrast, children's actual reading behaviors may be determined through direct observation. Observation of a home reading activity may display what young boys and girls are doing during shared book reading with their parent at home (Hindman et al, 2006). However, the presence of researchers at home observing home shared book reading may have reliability issues by preventing natural reading behaviors from occurring. A possible alternative to home observation is direct observation of children's natural reading-related behaviors at public space, that is, public library.

Public libraries serve a wide range of literacy-related needs, but one of the main goals shared across libraries is to help young children learn to read and increase school readiness by providing reading resource and places (Bateson, 2011; Celano & Numan, 2001). Research by Kraykamp (2003) shows a correlation between regular and frequent library attendance and usage in early childhood and increased quality of reading experiences (i.e., reading for leisure) and preferences (i.e., increased interest in books that are more literarily advanced and which involve more complex storylines) by the time children enter elementary school. In other words, the public library could be a good context to observe and study children's reading behaviors and experiences. Open-access to local libraries makes a prime location for researchers in which to observe and study parent-child reading behaviors (Ward & Wason-Ellam, 2005) as libraries provide community access to a wide range of reading materials and other literacy-related activities. In this setting, children have access to collections and materials appropriate for varying reading levels and have the opportunity to choose their own books and spend some time to actually engage in reading and reading interactions (Celano & Neuman, 2001).

We may be able to examine children's reading behaviors and related gender differences by using these two methods: observing reading behaviors in the library and collecting parent reported information regarding the home reading. Observing more real-life interactions while comparing gender differences in reading could gather naturalistic behaviors at the time of observation; parent report of children's reading at home could provide information of overall characteristics of reading behaviors which could be easily compared across boys and girls.

The Current Study

While literature suggests early gender differences in reading behaviors, limited evidence is available that actually focuses on examining boys and girls behaviors. Further, the majority of existing research studies focus on either the child home reading behaviors or library usage and reading behaviors (Bergersen, 2015; Celano, & Neuman, 2001; Evans, Shaw, & Bell, 2000; Kraykamp, 2003). More complicated is the method of data collection, where there is a lack of natural observation (not controlled, and not requested by researchers) of children's reading behaviors.

This study focuses on identifying potential gender differences in young children's reading-related behaviors and experiences without providing intervention in an effort to gain an understanding of unaltered behavioral reading patterns. In order to do this, the study uses both parent report and direct behavior observation methods. Also, this study bridges research between the home and library environments, by analyzing library usage behaviors as well as reading behaviors at home. Accordingly, I chose and compared two sources of information to determine early gender differences in reading: direct observation at the library and parent survey regarding home reading behaviors.

Research Questions

To gain insight into gender differences in early reading behaviors and to build upon the current body of literature, this study seeks to answer the following research questions:

1: Do observed library reading-related behaviors differ between preschool boys and girls?

1-1: Does engagement in book browsing differ between preschool boys and girls?

1-2: Does engagement in shared book reading at the library differ between preschool boys and girls?

1-3. Do shared reading parent-child interactions at the library differ between preschool boys and girls?

2. Do home reading behaviors as reported by parents differ between preschool boys and girls?

Based on previous literature (Bourke & Adams, 2011; Coles & Hall, 2002; Logan & Johnston, 2009; Peterson & Parr, 2012; Sainsbury & Schagen, 2004), I hypothesize that girls will be more involved in book selection and browsing, more engaged in shared reading and experience more book reading interactions (expanding, describing, and print referencing) with their parents than boys, and that parents will report that girls experience higher quality home book access, home book reading, and home shared reading interactions than boys.

METHOD

Participants

Participants of the current study was he overall sample observed in the library was comprised of 68 child-caregiver dyads (35 girls and 33 boys) who were observed in the library as well as returned parent survey reporting family and child demographic characteristics (i.e., child gender and age) and home reading experiences.. Characteristics of participating children are presented in Table 1. Gender was nearly evenly divided within the sample between girls (51.50%) and boys (48.80%). Participating children included preschoolers aged 2 to 6, with 29.40% of 3-year-olds and 25% of 5-year-olds. Most children came from homes where English was the primary language (61.80%) and the majority had mothers who were college graduates or were pursuing graduate education (67.60%). Race/ethnicity of participants was diverse with 47.10% of Caucasian and 10.30% of Hispanic-Latino.

Coding of Reading-Related Behaviors

To identify types of reading-related behaviors and reading experiences observed within the library and to be able to compare those behaviors between boys and girls, a coding scheme was developed. Initial coding scheme was developed from preliminary observation and the revised to include four categories of behavior: (1) Book Access Behaviors, (2) Shared Book Reading, (3) Play and Other Behaviors, and (4) Librarian

Behavior. Of all behaviors observed, Book Access and Shared Reading Behaviors were included for this study. Book Access focused on book and other media browsing behaviors with the intent of identifying child involvement in such activates. Shared Book Reading focused on types of shared reading interactions, including contents of parent-child extra-textual interactions and engagement in book discussion. Each behavior was coded for parent and then for child behaviors.

Thirteen practice observations were conducted from February 6, 2013 to March 16, 2013. Interrater reliability was established very high for official observations, as 100% for Book Access and 92% for Shared Book Reading. Observations were recorded in 12 consecutive 5-minute increments over the course of 1 hour. Two observers divided observation areas (i.e., book shelves for book access observation and reading/seating area for shared reading observation) and coded for one area for the duration of the 1-hour observations. Time was not stopped to record family descriptions, this was done within each individual 5-minute coding window. Only behaviors that last 30 seconds or more were recorded on the observation sheet. The number of observed periods for each reading-related behavior was used as the measure of the amount of behavior and additionally it was divided by the number of the total observation periods (maximum = 12) for each family as a proportion of intervals when each behavior was observed.

Engagement in book browsing behavior was assessed by three items of observed behaviors (i.e., parent browsing at book/audio shelves [while interactive with child], parent socializing, talking with other adults [while child browsing], parent random behavior [while child browsing]). This was done to provide information on overall child book browsing behavior beyond just browsing interactively with parent. For example,

when parent was observed to browse books (i.e., parent browsing at book/audio shelves), interacting with their child, is coded as parent browsing + child browsing interactive (i.e., parent browsing at book/audio shelves [interactive]). This two-step process of parent coding and subsequent child coding was done to provide information of general as well as interactive behavior.

To analyze total reading behavior, a variable was created that indicated the number of time intervals with shared reading observed. Only one question was used to analyze shared reading behavior on its own (i.e., child attending to/engaging in reading). During observation, children were coded as actively engaged in shared reading if they maintained eye contact on the page and asked questions during the shared reading interaction.

To assess shared reading interactions, five reading interaction variables were created using five individual behaviors from observation (i.e., no discussion-verbatim reading, parent expanding discussion, parent describing discussion, parent responding to child talk, parent print referencing).

Finally, the family survey was used to measure parent reported home reading, including book access, home reading behaviors, and shared reading interactions using a Likert scale. Book access was coded using the question "Approximately how many books for your 2- to 6-year-old child do you own?" Home reading was assessed by using two questions from the survey "How often does [primary caregiver] read to your 2- to 6-year-old child?" and "How many minutes did this person read to your 2- to 6-year-old child yesterday?" To assess parent-reported home shared reading interactions, six variables were analyzed using all possible responses to one question from the survey, "When

reading to your child, what does this person do?" Possible responses were coded as individual variables for observation and included 1) verbatim reading; 2) verbatim reading followed by discussion; 3) pause while reading to discuss the book with the child; 4) pause while reading to help child recognize or sound out letters, sounds, and words (i.e., print referencing); 5) pause while reading to comment on images inside the book; 6) pause while reading to ask child what might happen next, or connect book's context to other things in the child's world.

Procedure

Observations in public libraries were conducted to gather information regarding parent-child behaviors during library usage, including book selection and shared reading experiences between boys and girls. IRB approval was obtained to publicly observe these parent-child library interactions and shared reading experiences at five branches of the Salt Lake City Library System (i.e., Main, Chapman, Day-Riverside, Foothill, and Sprague) in neighborhoods with varying socioeconomic status and with young population. These branches provide services directed toward children with dedicated children's book area. Preliminary observations were performed to refine the coding scheme and survey, to improve the discretion of the observation methods, and to increase and establish reliability among observers.

Official observations began March 19, 2013 and ended May 29, 2013. This time period was chosen because it allowed us to gain insight on library behavior before summer, as library programs and usage change dramatically at that time since children are out of school (Celano & Neuman, 2001; Celano & Neuman, 2008; Du, 2010). In an

effort to avoid altering library behaviors in response to observation, coders did not wear nametags or other identifying information. Observation was not informed to participants and coders maintained enough distance to allow participants to engaged in their routine and natural behavior within the library. Observations occurred on all days of the week and at five different times (i.e., morning, early afternoon, late afternoon, evening, and weekend) in order to capture representative samples of library behaviors at various times.

Upon entering the children's section of the library, participants were assigned a number by observers that identified which branch of the library observation was taking place, what time period in the day observation was occurring, and number in relation to other parent-child dyads observed during that specific observation period. Only one number was assigned in a situation where two caregivers were accompanying a child or children in the same household. The most actively involved caregiver was the one for which observations were coded for the duration of the observation. If a family had more than one child within the age range of the study, only the oldest child's behaviors were used for this study.

Children's behaviors were coded as they took place within each 5-minute window of the 60-minute observation period (i.e., time sampling) and were identified in relation to their parent's actions, following Celano and Neuman (2008), as either actively taking part in the activity with their parent (i.e., book browsing, DVD browsing, shared reading, etc.) or engaging in another unrelated activity (i.e., literacy or nonliteracy-based) (Appendix A).

A survey was administered (Appendix B) to gain greater insight into library usage, the home reading environment, and to obtain demographic information of library

patrons. The survey was provided in either English or Spanish. Survey questions were developed based on previous research in library use, parent-child reading experiences, and librarian behaviors (Celano & Neuman, 2008; Du, 2010; Farmer & Stricevic, 2011; Francis, 2009; Vannobbergen, et al., 2009) and included family background information. The survey was used to analyze parent reported home reading behaviors by analyzing questions regarding book ownership, parent-child shared reading frequency and duration, and parent-child shared book reading interactions. Patrons were not asked to complete the survey until they were leaving the library.

Analytic Strategy

For this study, the gender wars utilized as the independent variable to understand the degree to which it explains the variability in dependent variables of child engagement in book selection and browsing, shared reading, and parent-child shared reading interactions. For all research questions, *t*-test was used to examine the overall gender differences in each reading-related behaviors. Subsequently, Analysis of Covariance (ANCOVA) was conducted to analyze differences in book access and reading behaviors across children's gender, after controlling for age. *Cohen's d* was use as a measure of effect size of gender predicting each of the reading-related behaviors. All analysis was conducted with SPSS statistical software program.

Table 1. *Background Characteristics of Participants (N=68)*

	% (*N*)
Age (years)	
Two	10.30 (7)
Three	29.40 (20)
Four	16.20 (11)
Five	25.00 (17)
Six	19.10 (13)
Gender	
Girl	51.50 (35)
Boy	48.50 (33)
Home Language	
English	61.80 (42)
Spanish	11.80 (8)
Other	7.40 (5)
Not reported	19.10 (13)
Maternal education	
Some high school	5.90 (4)
High school grad/GED	8.80 (6)
Some college	10.30 (7)
College grad	25.00 (17)
Graduate education	42.60 (29)
Not reported	7.40 (5)
Race-ethnicity	
Hispanic-Latino	10.30 (7)
Native American	0.00 (0)
African American	1.50 (1)
Asian or Pacific Islander	5.90 (4)
Caucasian	47.10 (32)
Other	5.90 (4)
Not reported	29.40 (20)

RESULTS

Observed Reading-Related Behaviors of Preschoolers in the Library

Independent-samples *t*-tests were conducted to compare reading-related behaviors in preschoolers in the library across gender. Significant gender differences noted through these analyses, along with general descriptive statistics for the number and the percentage of time intervals for each reading-related behavior are reported in Table 2.

Results showed that there was no significant gender difference in the number of time intervals with book browsing behaviors, the percentage of time intervals with children's book browsing over total intervals observed, and the percentage of time intervals with children's book browsing over total time spent in general book access behavior. The results suggest that children's gender was not associated with book browsing behaviors. Specifically, our results suggest that preschool children's book browsing behaviors in the library were not different across gender.

Similarly, there were no significant gender differences in interactive book browsing, including the number of time intervals, the percentage of time intervals with children's interactive book browsing over total intervals observed, and the percentage of time intervals with children's interactive book browsing over total time spent in book access behavior. These results suggest that children's gender was not associated with interactive book browsing behavior.

For general reading, there was a significant difference in the percentage of time

intervals with children's general reading over total intervals observed in the scores for boys (M = 7.38, SD = 20.47) and girls (M = 19.65, SD = 33.24), $t(57.05) = -1.84$, $p < .10$. There was also a significant difference in the percentage of time intervals with children's general reading behavior over total time spent in library reading behavior in the scores for boys (M = 10.38, SD = 28.91) and girls (M = 27.76, SD = 43.09) conditions; $t(59.75) = -1.96$, $p < .05$. However, no significant gender difference was found in the number of time intervals in general reading behavior. These results suggest that girls were more likely to spend their library visit time in reading.

Book access behaviors showed no significant differences between genders. However, differences were noted in shared reading and in individual reading interaction. Therefore, our results suggest that preschool-aged boys' and girls' percentage of time intervals engaged in shared reading over total time spent in library reading behavior is influenced by their gender. Further, our results suggest that preschool-aged boys' and girls' percentage of time intervals engaged in describing discussion with a parent over library reading is influenced by their gender.

There was a significant difference in the percentage of time intervals engaged in parental print referencing during shared reading over library reading in the scores for boys (M = 1.82, SD = 10.44) and girls (M = 12.94, SD = 28.74) conditions; $t(43.29) = -2.14$, $p < .05$. Therefore, our results suggest that preschool-aged boys' and girls' percentage of time intervals engaged in interaction with parents in print referencing over time spent in library shared reading is influenced by their gender.

Reading-Related Behaviors of Preschoolers as Reported in Survey

Independent-samples *t*-tests were conducted to compare reported home reading behaviors in preschoolers across gender. Significant gender differences noted through these analyses, along with general descriptive statistics for the each home reading behavior are reported in Table 3.

There was no significant difference in parent reporting of how many books the child owned in the scores for boys (M = .4.21, SD = 1.14) and girls (M = 4.03, SD = 1.24) conditions; $t(66) = .67$, $p = .51$. These results suggest that preschool-aged boys' and girls' parent reported home book ownership is not influenced by their gender.

There was no significant difference in parent reporting of how often the main caregiver read to the child in the home or how many minutes the main caregiver had read to the child in the home the previous day in the scores for boys and girls. These results suggest that preschool-aged boys' and girls' parent reported home book reading behaviors are not influenced by their gender.

In our analyses of reading interactions, there were no significant differences in the scores for boys and girls for parent reporting of verbatim reading in the home, pausing while reading for discussion, text referencing, commenting on illustrations, or asking child questions. There was a significant difference in parent reporting of reading and discussion in the scores for boys (M = .09, SD = .29) and girls (M = .31, SD = .47) conditions; $t(57.25) = -2.37$, $p < .10$. These results suggest that while preschool-aged boys' and girls' parent reported discussion after reading is significant, all other home shared reading interactions are not influenced by their gender.

Gender Difference in Observed Engagement in Book Browsing

Analysis of Covariance (ANCOVA) was used to analyze differences in book browsing behaviors (i.e., browsing with parent or browsing independently) across child gender, after controlling for children's age. Results showed no gender differences (F (1) = 2.72, p =.10) in the number of time intervals observed of children's book access (Table 4).

When analyzing the percentage of time intervals parents and children engaged in book browsing over total time intervals observed in the library, ANCOVA showed no gender differences (F (1) = .00, p =.99, d = -.06) (Table 4). Similarly, when analyzing the percentage of time intervals children engaged in book access over total number of time intervals with general book access behavior (i.e., all possible behaviors within book browsing beyond simply browsing at books), ANCOVA showed no gender differences (F (1) = .08, p =.77, d = .01) in book access percentage (Table 4).

Analysis of Covariance (ANCOVA) was used to analyze differences in interactive book browsing behaviors (i.e., observed instances of parent-child browsing) across child gender after controlling for age. Results showed that the number of intervals where interactive book browsing was observed differed across child gender with girls more engaged in browsing (F (1) = 3.96, p <.10, d = .37) (Table 5). Cohen's effect size value (d = .37) meets Cohen's minimum standard to be considered as a small effect size and supports practical significance of difference between genders. When analyzing the percentage of intervals children engaged in interactive book browsing over total number of intervals observed in the library, ANCOVA showed no gender differences in interactive book browsing percentage (F (1) = .29, p = .59, d = .02) (Table 5). Similarly,

when analyzing the percentage of time intervals children engaged in interactive book browsing over total number of time intervals with book access behavior, ANCOVA showed no gender differences in interactive book browsing percentage (F (1) = .69, p =.41, d = .10) (Table 5).

Thus, ANCOVA shows that children's gender was not associated with book browsing behaviors (i.e., browsing with parent or browsing independently) after controlling for child age. Specifically, our results showed no differences in preschool-aged boys' and girls' book browsing behaviors in the library. However, further analysis of interactive book browsing behaviors (i.e., child browsing with parent) suggests that the number of time intervals preschool-aged boys and girls spend engaged in interactive book browsing behaviors with an adult caregiver in the library is influenced by their gender, with girls more engaged in interactive book browsing.

Gender Differences in Observed Engagement in Reading

Analysis of Covariance (ANCOVA) was used to analyze differences in general reading behaviors (i.e., all behaviors observed during parent-child shared reading) in the library across child gender after controlling for age. Results showed no child gender differences in the number of time intervals engaged in general reading behavior (F (1) = .53, p = .47, d = .26) (Table 6).

When analyzing the percentage of time intervals observed of general reading over total intervals observed in the library, ANCOVA showed no gender differences (F (1) = 2.19, p = .14, d = .44) (Table 6). When analyzing the percentage of time intervals children engaged in general reading over time intervals spent in library reading (i.e., all

observed behaviors during library reading including shared reading), ANCOVA showed differences across child gender with girls more engaged in general reading (F (1) = 3.52, p =.07, d = .54) (Table 6). The practical significance of this finding is supported by Cohen's effect size value (d = .54), which meets Cohen's standard to be considered as a medium effect size.

Analysis of Covariance (ANCOVA) was used to analyze differences in shared reading (i.e., only coded when child was attending to or engaged in reading and does not include shared reading) behaviors across child gender, after controlling for age. Results showed no gender differences (F (1) = .59, p =.45, d = .26) in the number of time intervals observed engaged in shared reading behavior (Table 7).

When analyzing the percentage of time intervals observed of shared reading over total intervals observed in the library, ANCOVA showed no gender differences (F (1) = .93, p = .34, d = .31) (Table 7). When analyzing the percentage of time intervals children engaged in shared reading over time intervals observed engaged in library reading behavior, ANCOVA showed differences across child gender with girls more engaged in shared reading (F (1) = 2.90, p =.09, d = .49) (Table 7). The practical significance of this finding is supported by Cohen's effect size value (d = .49), which meets Cohen's standard to be considered as a small effect size.

ANCOVA suggests that children's gender was associated with general reading behaviors after controlling for children's age. Specifically, our results suggest that girls experience a higher percentage of time intervals engaged in general reading over time spent in library reading behavior. Further ANCOVA analyses exploring gender differences in shared reading behaviors suggest that girls experience a higher percentage

of time intervals engaged in shared reading over total time spent in library reading behavior.

Gender Differences in Observed Shared Reading Interactions

Comparing shared reading interactions across child sex after controlling for age showed no gender differences (F (1) = 2.41, p =.13, d = .40) when analyzing the number of time intervals observed of child-adult verbatim reading (Table 8). When analyzing the percentage of time intervals parents and children engaged verbatim reading over total time intervals spent in library reading, ANCOVA showed no gender differences (F (1) = 1.91, p =.17, d = .37) (Table 8).

Analyzing differences in the number of time intervals observed of shared reading interactions across child sex after controlling for age showed no gender differences in expanding discussion during shared reading (F (1) = .06, p =.81, d = .15) (Table 8). When analyzing the percentage of time intervals observed of parent-child expanding discussion during shared reading over total time intervals spent in library reading, ANCOVA showed no gender differences (F (1) = .71, p = .40, d = .29). Comparing differences in parental provision of describing discussion during shared reading across child gender, after controlling for children's age, showed no gender differences in the number of time intervals observed of describing in shared reading (F (1) = 1.22, p =.27, d = .35).

When analyzing the percentage of time parents and children engaged in describing during shared reading over total time intervals spent in library reading, ANCOVA showed a difference between genders, with girls more engaged in describing

during shared reading (F (1) = 3.08, p = .08, d = .50) (Table 8). The practical significance of this finding is supported by Cohen's effect size value (d = .50), which meets Cohen's standard to be considered as a medium effect size.

Comparing differences in parental responsiveness to child talk across child gender, after controlling for children's age, showed no gender differences in frequency of responding to child talk during shared reading (F (1) = .36, p =.55, d = .23). When analyzing the percentage of time intervals parents responded to children during shared reading over total time intervals spent in library reading, ANCOVA showed no gender differences (F (1) = 1.23, p = .27, d = .37) (Table 8).

Further, no gender differences were found in parental discussion of print and related skills in shared reading after controlling for children's age. Results showed no gender differences in the number of time intervals observed of referring to print in shared reading (F (1) = 1.99, p =.16, d = .40) . However, the percentage of time intervals of parental print reference in shared reading over total time intervals spent in library reading showed that girls experienced more print referencing during shared reading with a medium effect size (F (1) = 3.758, p <.10, d = .51) (Table 8).

ANCOVA suggests that children's gender was associated with parent-child verbatim reading without any discussion during shared reading. Further, analysis showed a difference between genders in percentage of time of parent-child describing discussion during shared reading over total time intervals spent in library reading, with girls more engaged in describing. Girls experienced more print referencing interactions during shared reading when considering percentage of time intervals of parental print referencing.

Gender Differences in Reported Home Reading Behaviors

Home reading behaviors were divided into three categories. The first category addressed book access/ownership in the home, the second category identified amount of shared reading, and the third category analyzed types of shared reading interactions.

Analysis of Covariance (ANCOVA) was used to analyze differences in parent reported home book access across child gender, after controlling for children's age. Results showed no gender differences (F (1) = .23, p =.63, d = -.16) in parent report of how many books were owned by the child (Table 9).

Parent reported home book reading behaviors across child gender was not differed by gender after controlling for children's age (F (1) = .02, p =.88, d = -.01). Results further showed no gender significance (F (1) = .07, p =.79, d = -.02) in parent report of how many minutes the main caregiver had read to the child the previous day.

ANCOVA results of parent reported home shared reading interactions showed no gender differences in parent report of verbatim reading (F (1) = 1.27, p =.26, d = .31), discussion during shared reading (F (1) = .67, p =.42, d = -.21), print referencing (F (1) = 1.85, p =.18, d = .35), commenting on illustrations (F (1) = 1.45, p =.23, d = .36), or asking child questions during home shared reading (F (1) = .49, p =.49, d = .17). However, girls had higher scores in discussion following verbatim reading than boys with a medium effect size (F (1) = 7.50, $p < .05$, d = .57) .

Thus, ANCOVA shows that children's gender was not associated with home book access/ownership or the amount of home shared book reading as reported by parent. However, child's age was associated with home book reading experiences. Specifically, our results suggest that older children more engaged in home book reading behavior.

Further, ANCOVA suggests that children's gender was not associated with parent report of most of shared book reading interaction behaviors, except book discussion interactions after verbatim reading. Our results suggest that girls engaged in more discussion after verbatim reading with a parent during home shared reading.

Comparing Survey and Library Observation

Cohen's d was used to gain an understanding of the effect size of gender in each ANCOVA analysis. Through this, we were able to compare the predictive power of gender for reading behaviors from library observation and the survey between the two. As presented in Figure 1, *Cohen's d* showed that a greater number of significant findings were obtained through observational research. Of those statistically significant findings, all meet the requirements to be considered a medium effect size, with one variable even going further to indicate large effect size. For parent-reported home reading behaviors, only one reading variable (i.e., home discussion) indicates a significant association between gender and parent-child reading interaction with a large effect size. Thus, overall observation at the library yielded more statistically significant gender differences with medium to large effect size, favoring girls over boys. Results indicated that girls were more likely to be engaged in book access and reading behaviors and those gender differences were more likely to be detected from natural observation than parent survey report.

Summary of Findings

Overall, library observation showed that girls were involved in more time intervals of interactive browsing behaviors than boys, after controlling for age. Also, girls experienced a higher percentage of time intervals engaged in general reading behavior over time spent engaged in library reading behavior.

Further ANCOVA analyses exploring gender differences specifically in shared reading behaviors suggest that girls experience a higher percentage of time intervals engaged in shared reading over total time spent in library reading behavior.

No differences across girls and boys in number or percentage of shared reading interactions were noted for verbatim reading, expanding, or parents responding to child's talk. However, girls experienced a higher percentage of time intervals engaged in describing discussion and print referencing during shared reading.

Analysis of parent reported home reading behaviors showed no gender differences in home book access or home reading behaviors. Girls were found to engage more than boys in discussion after verbatim reading. However, no gender differences in parent report of home shared reading interactions were noted for verbatim reading, pausing while reading to discuss, pausing while reading to engage in print referencing, pausing while reading to comment on illustrations, or pausing while reading to ask the child what might happen next or to connect book's context to other things in the child's world.

Examination of *Cohen's d* as effect size of gender indicated that indicated that girls were more likely to be engaged in book access and reading behaviors. Comparisons of effect size across variables of reading-related behaviors showed that larger effect size

was noted for reading behaviors as observed naturally at the library than those as reported by parents through survey.

Table 2. *Descriptive Statistics of Time Intervals With Reading-Related Behavior of Preschoolers*

	Mean (*SD*)		
	All (*N*=68)	Girls (*N*=35)	Boys (*N*= 33)
BOOK ACCESS			
# Book Browsing	.90 (1.38)	1.14 (1.57)	.64 (1.11)
%Book Browsing Over Total Intervals Observed	24.41 (35.76)	23.37 (30.84)	25.51 (40.80)
%Book Browsing Over Book Access Intervals	25.50 (36.60)	26.50 (36.90)	25.96 (40.83)
# Interactive Book Browsing	.54 (.95)	.71 (1.05)	.36 (.82)
% Int. Book Browsing Over Total Intervals Observed	15.88 (29.91)	16.19 (25.79)	15.55 (34.15)
% Int. Book Browsing Over Book Access Intervals	16.61 (30.66)	18.93 (32.68)	15.66 (34.14)
SHARED READING			
# General Reading	.74 (1.67)	.94 (1.86)	.52 (1.44)
% General Reading Over Total Intervals Observed*	13.70 (28.27)	19.65 (33.24)	7.38 (20.47)
% General Reading Over Total Library Reading Intervals*	19.32 (37.66)	30.61 (44.49)	10.38 (28.91)
# Shared Reading	.63 (1.60)	.83 (1.84)	.42 (1.28)
% Shared Reading Over Total Intervals Observed	5.65 (17.98)	8.36 (21.61)	2.77 (12.80)
% Shared Reading Over Total Library Reading Intervals*	16.20 (33.84)	23.95 (40.03)	7.98 (23.66)
READING INTERACTION			
# Verbatim Reading	.06 (.29)	.11 (40)	.00 (.00)
% Verbatim Reading	2.57 (13.75)	5.00 (18.98)	.00 (.00)
# Reading w/ Expanding	.31 (.85094)	.37 (.84)	.24 (.87)
% Reading w/ Expanding	7.58 (20.18)	10.36 (22.55)	4.62 (17.19)
# Reading w/Describing	.28 (.73)	.40 (.88)	.15 (.51)
% Reading w/Describing*	6.58 (17.72)	13.00 (26.95)	2.80 (9.84)
# Reading w/ Responding	5.88 (1.41)	.74 (1.58)	.42 (1.20)
% Reading w/ Responding	15.17 (33.09	20.97 (37.81)	9.02 (26.41)
# Reading w/ Print Referencing	.22 (.64)	.34 (.73)	.09 (.52)

Table 2 Continued

% Reading w/ Print Referencing*	7.54 (22.42)	12.94 (28.74)	1.82 (10.44)

Note. * marked significant gender differences at $p < .10$.

Table 3. *Descriptive Statistics of Reported Home Reading Behaviors*

	Mean (*SD*)		
	All (*N*=68)	Girls (*N*=35)	Boys (*N*= 33)
BOOK ACCESS			
How many books	4.12 (1.13)	4.03 (1.12)	4.21 (1.14)
SHARED READING			
How often read to child	4.67 (.79)	4.66 (.91)	4.67 (.65)
How many minutes read to child yesterday	3.41 (1.10)	3.40 (1.17)	3.42 (1.03)
READING INTERACTION			
Verbatim reading	.15 (.36)	.20 (41)	.09 (.29)
Read entire book then discuss*	.21 (.41)	.31 (.47)	.09 (.29)
Pause while reading to discuss	.87 (.64)	.80 (.41)	.94 (.83)
Pause while reading to reference print	.54 (.50)	.63 (.49)	45 (.51)
Pause while reading to comment on illustrations	.72 (.45)	.80 (.41)	.64 (.49)
Pause while reading to ask child questions	.56 (.50)	.60 (.50)	.52 (.51)

Note. . * marked significant gender differences at $p < .10$.

Table 4. *ANCOVA Results for Gender Differences in Number of Time Intervals and Percent of Time Intervals With Children's Book Browsing*

Dependent Var	SS (df)	MS	*F*	*Cohen's d*	R^2
# Book Browsing	5.13 (1)	5.13	2.72	.37	.045
% Book Browsing/Total	.10 (1)	.10	.00	-.06	.033
% Book Browsing/BA	125.06 (1)	125.06	. 08	.01	.027

Table 5. *ANCOVA Results for Gender Differences in Number of Time Intervals and Percent of Time Intervals With Children's Interactive Book Browsing*

Dependent Var	SS (df)	MS	*F*	*Cohen's d*	R^2
# Int. Book Browsing	3.28 (1)	3.28	**3.96~**	.37	.117
% Int. Book Browsing/Total	243.04 (1)	243.04	.29	.02	.096
% Int. Book Browsing/BA	712.77 (1)	712.77	. 69	.10	.085

~ $p < .10$

Table 6. *ANCOVA Results for Gender Differences in Number of Time Intervals and Percent of Time Intervals With Children's Reading*

Dependent Var	SS (df)	MS	*F*	Cohen's *d*	R^2
# Reading	1.43 (1)	1.43	.53	.26	.069
% Reading/Total	1613.17 (1)	1613.17	2.19	.44	.106
% Reading/LR	4794.38 (1)	4794.38	**3.52~**	.54	.125

~ $p < .10$

Table 7. *ANCOVA Results for Gender Differences in Number of Time Intervals and Percent of Time Intervals With Children's Shared Reading*

Dependent Var	SS (df)	MS	*F*	*Cohen's d*	R^2
# Shared Reading	1.46 (1)	1.46	.59	.26	.053
% S. Reading/Total	285.63 (1)	285.63	.93	.31	.077
% S. Reading/LR	3103.66 (1)	3103.66	**2.90~**	.49	.093

~ $p < .10$

Table 8. *ANCOVA Results for Gender Differences in Number of Time Intervals and Percent of Time Intervals With Children's Shared Reading Interactions*

Dependent Var	SS (df)	MS	*F*	*Cohen's d*	R^2
# Verbatim	.21 (1)	.21	**2.41~**	.40	.039
% Verbatim	357.94 (1)	357.94	1.91	.37	.039
# Expanding	.04 (1)	.04	.06	.15	.078
% Expanding	274.83 (1)	274.83	.71	.29	.076
# Describing	.62 (1)	.62	1.22	.35	.076
% Describing	1260.01 (1)	1260.01	**3.08~**	.50	.100
# Response	.68 (1)	.68	.36	.23	.069
% Response	1220.68 (1)	1220.68	1.23	.37	.118
# Code-focused	.80 (1)	.80	1.99	.40	.060
% Code-focused	1812.77 (1)	1812.77	**3.76~**	.51	.069

~ $p < .10$

Table 9. *ANCOVA Results for Gender Differences in Parent Report of Home Reading Behaviors*

Dependent Var	SS (df)	MS	*F*	*Cohen's d*	R^2
Books owned	.29 (1)	.29	.23	-.16	.023
How often read	.01 (1)	.01	.02	-.01	.005
Read to yesterday	.09 (1)	.09	.07	-.02	.064
Verbatim reading	.16 (1)	.16	1.27	.31	.030

Table 9 Continued

Discussion	1.10 (1)	1.10	7.50*	.51	.139
Illustration	.28 (1)	.28	.76	-.21	.013
Code-focused	.46 (1)	.46	1.85	.35	.032
Comment	.28 (1)	.28	1.45	.36	.077
Ask questions	.13 (1)	.13	.49	.17	.007

* $p < .05$

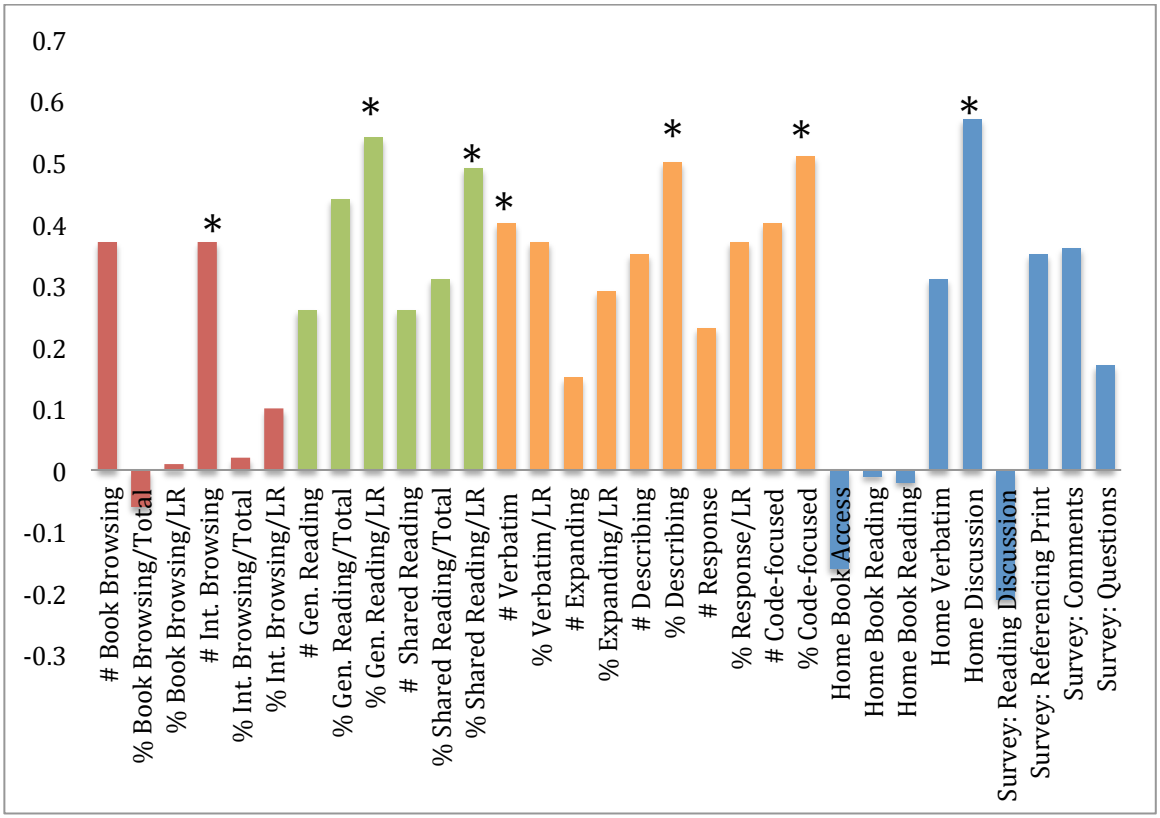

Figure 1. Effect Size (*Cohen's d)* of Gender (Girls vs. Boys) Predicting Reading Behaviors

DISCUSSION

The current study adds to the body of literature on children's reading-related behaviors by analyzing book selection and reading behaviors by gender, after controlling for age, in early childhood. Given the disparities between genders in reading interest and achievement seen in later childhood, with boys performing below their female counterparts (Coles & Hall, 2002; Peterson & Parr, 2012; Sainsbury & Schagen, 2004) this study provides valuable insight into book access and shared reading patterns in early childhood. Findings seek to deliver evidence of disparities in trends across gender. Since parental awareness of gender differences and subsequently tailored shared reading experiences can help both boys and girls experience increased quality shared reading experiences and assist in the development of positive reading attitudes throughout childhood (Abilock, 1997), this study's focus on early childhood is particularly important from an early-intervention standpoint, as disparities in reading achievement and interest are found to increase between genders from early childhood into grade school (Logan & Johnston, 2009).

The public library's open-access model, wide range of reading materials, literacy-related activities, and availability to children across the reading level spectrum make it a prime environment in which to observe parent-child reading behaviors (Ward & Wason-Ellam, 2005). Indeed, research has shown that library usage influences children's preferences and academic outcomes (Celano & Neuman, 2001; Whitehurst, et al., 1988).

By utilizing the public library, our study was able to obtain a wide range of observed browsing and reading behaviors and, in-turn, provide librarians with valuable information for parent education and early childhood literacy program development.

The study is unique in that it utilizes observation as well as parent report through survey. Through the use of unobtrusive observation, this study provides data that are more objective than parent report and survey data alone. By combing observation and survey data, we were able to collect information about both library and a home-reading behavior that is more accurate and less influenced by biases in parental reporting. Also, this study fills a niche in research of early childhood reading behaviors as many studies report gender differences in reading scores, but few studies report gender differences in reading behaviors.

Another strength of the study came from the manner in which observations were carried out. By observing several branches of the library during several different time intervals and throughout all days of the week, we were able to collect a sample of behaviors representative of general library usage and applicable to the diverse population served by the overall local library system. Ensuring that interrater reliability was established also bolsters the quality of findings and the integrity of the coding scheme, ensuring validity of the findings.

Gender Differences in Observed Engagement in Book Browsing

Girls were involved in more time intervals of interactive browsing than boys. This suggests that girls spend more time in looking for materials they need or want and that girls were more engaged in browsing with a parent. Also, older girls experienced a higher

percentage of time intervals engaged in book browsing behavior, both over total time observed and over time spent engaged in library reading behavior. This suggests that older children may be more capable to exploring library shelves in book browsing than younger children who may be more confined to designated child play areas. This supports findings by Abilock (1997) that boys and girls behave in the library differently, with girls working more collaboratively with a parent during book browsing. Also, findings are aligned with research on parental behaviors in the library showing that parents are generally less inclined to include boys in book browsing as they may show initial lack of interest (Wason-Ellam, et al., 2004). Educating parents to redirect boys to participate in book access and browsing can help parents provide boys with increased quality library usage experiences across genders, which is shown to be correlated with reading preferences in later childhood (Kraykamp, 2003).

Gender Differences in Observed Engagement in Reading

The study found that girls experience a higher percentage of time intervals engaged in shared reading over total time spent in library reading behavior, with age also found to be significant when percentage is observed over total time spent in library. This suggests that girls are more likely to attend to and be engaged in reading with an adult caregiver in the library. These findings are supported by De Haeghel, et al, (2012), indicating that boys are generally less motivated to read than their female peers. Also, Jones (2011) notes that girls are more likely to engage in reading for leisure and enjoyment, a trend that this study is able to support and identify in early childhood. Increasing successful, positive reading experiences and providing encouragement during

shared reading helps in the development of reading interest. Parental awareness of this trend can help parents make a greater effort to include boys in shared reading, provide positive reinforcement during shared reading, and focus on bolstering confidence during shared reading in an effort to establish an interest in reading from an early age and lessen the stress that is usually experienced by boys during reading related activities as a result of poor performance and frustration (De Naeghel, et al, 2012).

Gender Differences in Observed Shared Reading Interactions

Girls were found to spend a greater percentage of their library reading time engaged in describing discussion during shared reading with their caregivers. This suggests that during shared reading girls and adult caregivers are talking more about the details and characteristics of what is being read and supports findings by Tracey and Young (2002) that parents engage in discussion during shared reading more often with girls than with boys. Also, percentage of time intervals of parental print referencing in shared reading over total time intervals spent in library reading was higher for girls, showing that they experienced more print referencing from parents during shared reading. This shows that girls were not only spending a greater percentage of library reading time engaged in shared reading, but of that time spent, they experienced parental practices of higher quality reading interactions like code-focused talk (i.e., bringing the child's attention directly to the text by noting punctuation, phonics, letters, etc.) (Evans, et al., 2000). While children who read more frequently are more likely to show greater understanding of and performance in reading tasks (Logan & Johnston, 2009), frequency alone is not enough to cultivate proficient reading (Shealy & Cook, 2009). Teaching

parents how to engage in higher quality shared reading interactions with their children and how to follow their children's cues to expand or describe text further should be a primary component of library parent education programs. Making parents aware that children's cues during shared reading and patterns of attention/engagement vary across gender is also key in helping them gain an understanding of how to provide high-quality reading interactions for their children.

Gender Differences in Reported Home Reading Behaviors

Girls were found to engage in discussion after verbatim reading more than boys. This suggests that, although verbatim reading is the primary mode of reading, parents are building upon the quality of the shared reading experience by then engaging girls in discussion. Research by De Naeghel, et al., (2012) shows that shared reading interactions that include higher quality experiences such as discussion affect early literacy outcomes. Shealy and Cook (2009) emphasize that while verbatim reading provides many benefits to children, it is not enough alone to cultivate truly efficient reading outcomes. It is important that parents recognize the difference between verbatim reading and other higher quality reading interactions and learn how to incorporate these practices in their home shared reading across genders.

Gender Differences in Survey and Library Observation

Our results showed that a greater number of significant findings with larger effect size (from medium to large effect size) were obtained through observational research rather than home survey. Preschool girls were observed to be engaged in more

interactive book browsing and spend larger percentage of library time on reading interactions than boys. However, effect size of gender was not large for home book access and reading interactions. Results indicated that girls were more likely to be detected as engaged in reading-related behaviors from natural observation than parent survey report. This supports previous research indicating that for research involving young children natural observation can yield more representative findings than parent-report (Feldman, et al., 2005). In this context of this study, which observed behavior across multiple settings (i.e., book browsing, book reading, and shared reading interactions), natural observation provided a child-centered method of data collection that allowed researchers to observe and consider both parent and child interactions in the context of library usage and shared reading (Booren, et al., 2012).

Implications

While the library provides an valuable observational environment, it also is an environment more often utilized by individuals that have a high educational background or who place high value on literacy activities, which can influence overall reading interactions both at home and at the library. In this same area, however, this study shows a great strength in that it provides librarians valuable information of parent-child library reading behaviors and library usage. This can influence the development of reading programs, parent education programs, and literacy activities for young children.

Librarians can serve as examples for parents in modeling high-quality shared reading behaviors during child-focused literacy events. For example, each branch of the library we observed holds a preschool story time. Attendance at these events is high, with

parents encouraged to sing along with and include their children in the literacy activities. During this event, librarians can highlight one area in which parents can improve the quality of their shared reading interactions (e.g., discussion, expansion, code-focused talk) and model for parents how they would engage in this behavior during shared reading. It would be a venue that allows librarians to 1) teach parents a new concept, 2) model the concept for the parents, and then 3) allow the parents to engage in this new behavior with their children.

Also, by being aware of differences between genders in reading behaviors, parents can help encourage boys to engage in more interactive book browsing and shared reading behaviors in an effort to increase positive early childhood experiences with reading. This is important as research shows that early negative experiences with reading can influence a child's attitude toward reading and subsequent interest and involvement in reading activities (Jones, 2011).

Previous research has shown that natural observation of children's reading experiences can provide more valid results than parent-report home surveys. Although parent-reports are used often as they are relatively easy to distribute and provide children a comfortable and familiar setting in which data are collected (Feldman, et al., 2005), this method is not without bias and may not be the best way to collect representative data (Baroody & Diamond, 2013). This study's use of both natural observation in conjunction with home survey provides findings that can be easily applied for parent education in both library and home settings in an effort to improve quality of shared reading interactions across child gender.

Limitations

This study was limited by the sample with valid survey data. Overall, the observed sample size was much larger than the 68 participants included in the final sample. However, parents needed to be willing to complete the survey upon leaving the library in order to match up age, gender, and demographic information with observed behaviors and to provide information on home reading behaviors.

Another limitation of the study was the coding scheme's preference for parent-child dyads. Many participants attended the library with multiple children/siblings per adult. However, in these instances, only the behavior of the eldest child was coded to ensure that observed and coded behaviors were correctly matched up with participants. There were several cases that included children with mixed ages and different genders in which case we had to observe the eldest child even though each of the children were often times engaged in parallel activities with the adult caregiver.

While library was chosen to observe natural or intact reading-related behaviors (as opposed to a more controlled method of researchers' observing/recording parent-child reading at home), the observed behaviors could be different from those in a private space. Since library is a public space, parents and children may have different expectations of behavior control and management. Further although we tried to maintain space between researchers and patrons (who are study participants), there is a possibility that we might affect parents and children's book browsing and reading behaviors.

Conclusion

Overall, observation of reading behaviors directly show gender differences while survey report shows less statistical and practical significance in the predictability of gender on home book access, home reading, and home shared reading interactions. The current study shows that in early childhood girls are experiencing a greater percentage of time spent in the library engaged in book browsing and high-quality shared reading interactions and parent reported home reading interactions than their male counterparts. Awareness of this trend so early in a child's development is key to assisting early childhood professionals in developing parent education to assist in increasing high-quality parent-child reading interactions across both genders as children's attitudes toward reading tend to be established in early childhood and influenced by reading experiences (De Naeghel, et al., 2012). Libraries serve as a prime location to provide such parent education programing because of their open-access and diverse literacy offerings to the community (Ward & Wason-Ellam, 2005). These findings provide evidence-based support for previous research uniquely and specifically in application to early childhood, as research shows that parental awareness of gender differences in attitudes to reading and reading behaviors can influence the development of positive reading attitudes across genders into later childhood (Abilock, 1997).

APPENDIX A

CODING SCHEME

The coding scheme for the current study is divided into parent book access and parent-child reading as follows:

Parent Book Access:

1. Parent browsing at book/audiobook shelves
   Interactive, Non-interactive, Child other literacy related activity, Child non literacy related activity
2. Parent computer browsing
   Interactive, Non-interactive, Child other literacy related activity, Child non literacy related activity
3. Parent catalog/leaflet browsing
   Interactive, Non-interactive, Child other literacy related activity, Child non literacy related activity
4. Parent DVD/CD Browsing
   Interactive, Non-interactive, Child other literacy related activity, Child non literacy related activity
5. Parent talking with the librarian for help
   Interactive, Non-interactive, Child other literacy related activity, Child non literacy related activity

Parent Child Reading:

6. Suggestion of actual reading
   Parent, Child, Both/can't tell, Librarian
7. Genre of the books
   Fiction, non-fiction, ABC book, counting, magazine, can't tell
8. Who is reading
   Child read to parent, parent read to child, parent pair reach, parent echo read

<u>Parent Book Discussion:</u>

9. No discussion
10. Parent expanding discussion (yes, no, can't tell
11. Parent describing discussion (yes, no, can't tell)
12. Parent non-literacy talk (yes, no, can't tell)
13. Parent responding to child talk (yes, no, can't tell)

24. Parent teaching letters, sounds, words (yes, no, can't tell)
25. Child attending to/engaging in reading, asking questions (yes, no, can't tell)

APPENDIX B

HOME LITERACY SURVEY

The Family and Consumer Studies department of University of Utah is evaluating young children's reading and library experiences. Your participation in this survey will help us evaluate and design future library services. Your responses will be kept confidential. Thank you for taking time to help us today.

Library usage:

What is your relationship to the 2- to 6-year-old child with you at the library today?

☐Mother ☐Father ☐Both ☐Grand parent ☐Paid caregiver ☐Other _____

Who else came with you today? ☐Mother ☐Father ☐Grand parent ☐Paid caregiver ☐Child (how many?____) ☐Child's friend ☐Your friend ☐Other _____

How often does your child(ren) visit this or other Salt Lake City public library?

☐Once every few months ☐Monthly ☐Weekly ☐1 to 3 times a week ☐ 4 to 6 times a week

Is this Salt Lake City library the library branch closest to your home?

☐Yes ☐No (closest library branch is _____) ☐Don't know

Why did you come to library today? (Check all that apply)

☐To check out books for my child ☐To check out DVD's for my child ☐To check out books for myself

☐To check out DVD's for myself ☐To read to my children ☐To use a computer

☐To attend "Book Babies" or "Preschool Story time" ☐To attend other library events (e.g., craft, movies)

☐To spend free time at the library ☐Other

Approximately how many minutes did you (will you) stay in the library today?

_____

Approximately how many books/audio books per visit do you check out from the library for your 2-to 6-year-old child? ☐1-2 ☐3 - 5 ☐5-10 ☐10-15 ☐ more than 15

Reading at home:

Who does most of the reading at home with your 2- to 6-year-old child?

☐Mother ☐Father ☐Grand parent ☐Paid caregiver ☐Older sibling ☐ Other_____

And how often does this person read to your 2- to 6-year-old child?

☐Once a month or less ☐Once every few weeks ☐ 1 to 3 times a week ☐ 4 to 6 times a week ☐ Daily

How many minutes did this person read to your 2- to 6-year-old child yesterday?

☐0 minute ☐1 to 10 minutes ☐11 to 20 minutes ☐20 to 30 minutes ☐ 30+ minutes

When reading to your child, what does this person do? (Check all that applies to you)

☐Read the book or story word for word with no discussion

☐Read the entire book or story and then discuss it

☐Pause while reading to discuss the book with the child

☐Pause while reading to help child recognize or sound out letters, sounds, and words

☐Pause while reading to comment on images inside the book

☐Pause while reading to ask child what might happen next, or connect book's content to other things in child's world

Approximately how many books for your 2- to 6-year-old child do you own?

☐Less than 5 ☐5-10 ☐10-30 ☐30-50 ☐More than 50

How often do you or another adult teach your 2- to 6-year-old child reading and writing?

☐ Once a month or less ☐Once every few weeks ☐1 to 3 times a week ☐ 4 to 6 times a week ☐ Daily

How often do you read to yourself?

☐Once a month or less ☐Once every few weeks ☐1 to 3 times a week ☐ 4 to 6 times a week ☐ Daily

<u>Regarding the 2- to 6-year-old child with you today:</u>

Child1: Age _____ ☐ Boy or ☐ Girl; English speaking: ☐None ☐Fair ☐Good ☐ Fluent

How much does he/she enjoy being read to: ☐Not at all ☐Somewhat ☐Likes it ☐Loves it

How often does he/she look at or read books by himself/herself at home:

☐Once a month or less ☐Once every few weeks ☐1 to 3 times a week ☐ 4 to 6 times a week ☐ Daily

Which best describes your child's reading ability?

☐Reads only pictures ☐Recognizes letters and numbers ☐Recognizes some words

☐Sounds out some words ☐Sounds out many words ☐Reads independently

Child2: Age ____ ☐ Boy or ☐ Girl; English speaking: ☐None ☐Fair ☐Good ☐ Fluent

How much does he/she enjoy being read to: ☐Not at all ☐Somewhat ☐Likes it ☐Loves it

How often does he/she look at or read books by himself/herself at home:
☐Once a month or less ☐Once every few weeks ☐1 to 3 times a week ☐ 4 to 6 times a week ☐ Daily

Which best describes your child's reading ability?
☐Reads only pictures ☐Recognizes letters and numbers ☐Recognizes some words
☐Sounds out some words ☐Sounds out many words ☐Reads independently

<u>Demographics:</u>

Home language: _____ Other language(s) spoken at home? _____

Family's cultural background/ethnicity:
☐Hispanic/Latino ☐Native American ☐African American ☐Asian or pacific islander ☐ Caucasian ☐Other_____

What is the highest educational level of the mother of the child?
☐Some high school ☐ High school graduate or GED ☐Some college or technical training
☐ College graduate ☐Graduate school attendance or degree

What is the highest educational level of the father of the child?
☐Some high school ☐ High school graduate or GED ☐Some college or technical training
☐ College graduate ☐Graduate school attendance or degree

APPENDIX C

ANCOVA TABLES

Table C-1. *ANCOVA Results for Group Differences in Number of Time Intervals With Children's Book Browsing*

Source	SS	df	MS	F	d
Age	1.46	1	1.46	.77	
Gender	5.13	1	5.13	2.72	.37
Error	122.47	65	1.88		

Note. R^2 = .045, Adj. R^2 = .016.

Table C-2. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Book Browsing Over Total Intervals Observed*

Source	SS	df	MS	F	d
Age	2744.17	1	2744.17	2.15	
Gender	.10	1	.10	.00	-.06
Error	82858.80	65	1274.75		

Note. R^2 = .033, Adj. R^2 = .003.

Table C-3. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Book Browsing Over Time Intervals Spent in General Book Access Behavior*

Source	SS	df	MS	F	d
Age	2720.00	1	2720.00	1.82	
Gender	125.06	1	125.06	.08	.01
Error	96920.00	65	1491.08		

Note. R^2 = .027, Adj. R^2 = -.003.

Table C-4. *ANCOVA Results for Group Differences in Number of Time Intervals With Children's Interactive Book Browsing*

Source	SS	df	MS	F	d
Age	5.03	1	5.03	6.09*	
Gender	3.28	1	3.28	**3.96~**	.37
Error	53.75	65	.83		

Note. R^2 = .117, Adj. R^2 = .090.
~ p <.10 * p < .05

Table C-5. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Interactive Book Browsing Over Total Intervals Observed*

Source	SS	df	MS	F	d
Age	5724.52	1	5724.52	6.86*	
Gender	243.04	1	243.04	.29	.02
Error	54221.60	65	834.18		

Note. R^2 = .096, Adj. R^2 = .068.
* p < .05

Table C-6. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Interactive Book Browsing Over Time Intervals Spent in General Book Access Behavior*

Source	SS	df	MS	F	d
Age	6063.33	1	6063.33	5.84*	
Gender	712.77	1	712.77	.69	.10
Error	67536.00	65	1039.02		

Note. R^2 = .085, Adj. R^2 = .056.
* p < .05

Table C-7. *ANCOVA Results for Group Differences in Number of Time Intervals With Children's Reading*

Source	SS	df	MS	F	d
Age	9.90	1	9.90	3.69~	
Gender	1.43	1	1.43	.53	.26
Error	174.23	65	2.68		

Note. R^2 = .069, Adj. R^2 = .041.
~ p < .10

Table C-8. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Reading Over Total Intervals Observed*

Source	SS	df	MS	F	d
Age	3141.96	1	3141.96	4.27*	
Gender	1613.17	1	1613.17	2.19	.44
Error	47850.40	65	736.16		

Note. R^2 = .106, Adj. R^2 = .079.
* $p < .05$

Table C-9. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	5621.94	1	5621.94	4.13*	
Gender	4794.38	1	4794.38	**3.52**~	.54
Error	88432.80	65	1360.50		

Note. R^2 = .125, Adj. R^2 = .098.
~ p <.10, * p < .05

Table C-10. *ANCOVA Results for Group Differences in Number of Time Intervals With Children's Shared Reading*

Source	SS	df	MS	F	d
Age	6.30	1	6.30	2.55	
Gender	1.46	1	1.46	.59	.26
Error	160.73	65	2.47		

Note. R^2 = .053, Adj. R^2 = .024.

Table C-11. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Shared Reading Over Total Intervals Observed*

Source	SS	df	MS	F	d
Age	1138.42	1	1138.42	3.70~	
Gender	285.63	1	285.63	.93	.31
Error	19990.20	65	307.54		

Note. R^2 = .077, Adj. R^2 = .049.
~ $p < .10$

Table C-12. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Children's Shared Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	2801.16	1	2801.16	2.62	
Gender	3103.66	1	3103.66	**2.90~**	.49
Error	69586.40	65	1070.56		

Note. R^2 = .093, Adj. R^2 = .065.
~ p <.10

Table C-13. *ANCOVA Results for Group Differences in Number of Time Intervals With Parental Involvement in Verbatim Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	.00	1	.00	.05	
Gender	.21	1	.21	**2.41~**	.40
Error	5.54	65	.09		

Note. R^2 = .039, Adj. R^2 = .010.
~ p <.10

Table C-14. *ANCOVA Results for Group Differences in Percentage of Time With Parental Involvement in Verbatim Reading*

Source	SS	df	MS	F	d
Age	64.29	1	64.29	.34	
Gender	357.94	1	357.94	1.91	.37
Error	12185.70	65	187.470		

Note. R^2 = .039, Adj. R^2 = .009.

Table C-15. *ANCOVA Results for Group Differences in Number of Time Intervals With Parental Expanding Discussion in Shared Reading*

Source	SS	df	MS	F	d
Age	3.49	1	3.49	5.07*	
Gender	.04	1	.04	.06	.15
Error	44.75	65	.69		

Note. R^2 = .078, Adj. R^2 = .049.
* p < .05

Table C-16. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Parental Expanding Discussion in Shared Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	1526.15	1	1526.15	3.94~	
Gender	274.83	1	274.83	.71	.29
Error	25208.60	65	387.83		

Note. $R^2 = .076$, Adj. $R^2 = .048$.
~ $p < .10$

Table C-17. *ANCOVA Results for Group Differences in Number of Time Intervals With Parental Describing Discussion in Shared Reading*

Source	SS	df	MS	F	d
Age	1.65	1	1.65	3.25~	
Gender	.62	1	.62	1.22	.35
Error	32.99	65	.51		

Note. $R^2 = .076$, Adj. $R^2 = .047$.
~ $p < .10$

Table C-18. *ANCOVA Results for Group Differences in Percentage of Time Intervals With Parental Describing Discussion in Shared Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	1181.52	1	1181.52	2.89~	
Gender	1260.01	1	1260.01	**3.08~**	.50
Error	26618.80	65	409.52		

Note. $R^2 = .100$, Adj. $R^2 = .072$.
~ $p < .10$

Table C-19. *ANCOVA Results for Number of Time Intervals With Parental Response to Child Talk in Shared Reading*

Source	SS	df	MS	F	d
Age	7.41	1	7.41	3.91~	
Gender	.68	1	.68	.36	.23
Error	123.33	65	1.90		

Note. $R^2 = .069$, Adj. $R^2 = .040$.
~ $p < .10$

Table C-20. *ANCOVA Results for Percentage of Time Intervals With Parental Response to Child Talk in Shared Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	6240.18	1	6240.18	6.27*	
Gender	1220.68	1	1220.68	1.23	.37
Error	64702.30	65	995.42		

Note. $R^2 = .118$, Adj. $R^2 = .091$.
* $p < .05$

Table C-21. *ANCOVA Results for Group Differences in Number of Time Intervals With Parental Print Reference in Shared Reading*

Source	SS	df	MS	F	d
Age	.58	1	.58	1.44	
Gender	.80	1	.80	1.99	.40
Error	26.04	65	.40		

Note. $R^2 = .060$, Adj. $R^2 = .031$.

Table C-22. *ANCOVA Results for Percentage of Time Intervals With Parental Print Reference in Shared Reading Over Time Intervals Spent in Library Reading Behavior*

Source	SS	df	MS	F	d
Age	220.84	1	220.84	.46	
Gender	1812.77	1	1812.77	**3.76~**	.51
Error	31355.80	65	482.40		

Note. $R^2 = .069$, Adj. $R^2 = .040$
~ $p < .10$

Table C-23. *ANCOVA Results for Group Differences in Parent Report of How Many Books the Child Owns*

Source	SS	df	MS	F	d
Age	1.40	1	1.40	1.10	
Gender	.29	1	.29	.23	-.16
Error	83.09	65	1.28		

Note. $R^2 = .023$, Adj. $R^2 = -.007$

Table C-24. *ANCOVA Results for Parent Report of How Often the Main Caregiver Reads to the Child*

Source	SS	df	MS	F	d
Age	.23	1	.23	.36	
Gender	.01	1	.01	.02	-.01
Error	41.00	65	.63		

Note. R^2 = .005, Adj. R^2 = -.025

Table C-25. *ANCOVA Results for Parent Report of How Many Minutes the Main Caregiver Had Read to Child in Previous Day*

Source	SS	df	MS	F	d
Age	5.17	1	5.17	4.47*	
Gender	.09	1	.09	.07	-.02
Error	75.29	65	.1.16		

Note. R^2 = .064, Adj. R^2 = .036
* $p < .05$

Table C-26. *ANCOVA Results for Parent Report of Home Verbatim Reading*

Source	SS	df	MS	F	d
Age	.06	1	.06	.43	
Gender	.16	1	.16	1.27	.31
Error	8.27	65	.13		

Note. R^2 = .030, Adj. R^2 = .000

Table C-27. *ANCOVA Results for Parent Report of Discussion After Verbatim Reading*

Source	SS	df	MS	F	d
Age	.70	1	.70	4.73*	
Gender	1.10	1	1.10	7.50*	.57
Error	9.57	65	.15		

Note. R^2 = .139, Adj. R^2 = .112
* $p < .05$

Table C-28. *ANCOVA Results for Parent Report of Pausing for Discussion During Shared Reading*

Source	SS	df	MS	F	d
Age	.04	1	.04	.10	
Gender	.28	1	.28	.67	-.21
Error	27.44	65	.42		

Note. R^2 = .013, Adj. R^2 = -.017

Table C-29. *ANCOVA Results for Parent Report of Pausing for Print Referencing During Shared Reading*

Source	SS	df	MS	F	d
Age	.02	1	.02	.09	
Gender	.46	1	.46	1.85	.35
Error	16.33	65	.25		

Note. R^2 = .032, Adj. R^2 = .002

Table C-30. *ANCOVA Results for Parent Report of Pausing While Reading to Comment on Illustrations*

Source	SS	df	MS	F	d
Age	.60	1	.60	3.11~	
Gender	.28	1	.28	1.45	.36
Error	12.63	65	.19		

Note. R^2 = .077, Adj. R^2 = .049
~ $p < .10$

Table C-31. *ANCOVA Results for Parent Report of Pausing While Reading to Ask Child Questions*

Source	SS	df	MS	F	d
Age	.00	1	.00	.01	
Gender	.13	1	.13	.49	.17
Error	16.64	65	.26		

Note. R^2 = .007, Adj. R^2 = -.023

REFERENCES

Abilock, D. (1997). Sex in the library: How gender differences should affect practices and programs. *Emergency Librarian, 24*(5), 17 – 21.

Baroody, A. E., & Diamond, K. E. (2013). Measures of preschool children's interest and engagement in literacy activities: Examining gender differences and construct dimensions. *Early Childhood Research Quarterly, 28*(2), 291-301.

Bateson (2011). An assessment of the social impact of museum and library learning programmes, A rapid evidence assessment. *Department of Culture, Arts and Leisure,* 3 – 49.

Bergersen, V (2015). Can you read for me? A study of pupils' reading skills when starting school viewed in the context of the reading environment at home. Unpublished master's thesis, The Department of Education and Sports Science, University of Stavanger, Stavanger, Norway.

Blewitt, P., Rump, K.M., Shealy, S.E., & Cook, S. A. (2009). Shared book reading: When and how questions affect young children's word learning. *Journal of Educational Psychology, 101*(2), 294 – 304.

Booren, L. M., Downer, J. T., & Vitiello, V. E. (2012). Observation of children's interactions with teachers, peers, and tasks across preschool classroom activity settings. *Early Education and Development, 23*(4), 517 – 538.

Bourke, L., & Adams, A. (2011). Is it difference in language skills and working memory that account for girls being better at writing than boys. *Journal of Writing Research, 3*(3), 249 – 277.

Bourke, C. (2007). Public libraries: Partnerships, funding and relevance. *APLIS, 20*(3), 135 – 139.

Celano, D., & Neuman, S. (2001). The role of public libraries in children's literacy development: An evaluation report. *Pennsylvania Department of Education Office of Commonwealth Libraries.* Harrisburg, Pennsylvania. Pennsylvania Library Association.

Celano, D., & Neuman, S. (2008). When schools close, the knowledge gap grows. *Phi Delta Kappan, 90*(4), 256 – 262.

Cohen, D. H., Stern, V., & Balaban, N. (1997). *Observing and recording the behavior of young children* (4th ed.). New York: Teachers College Press.

Coles, M., & Hall, C. (2002). Gendered readings: Learning from children's reading choices. *Journal of Research in Reading,* 25(1), 96 – 108.

De Naeghel, J., Van Keer, H., Vansteenkiste, M., & Rosseel, Y. (2012). The relation between elementary students' recreational and academic reading motivation, reading frequency, engagement, and comprehension: A self-determination theory perspective. *Journal of Educational Psychology, 104*(3), 1006 – 1021.

Deckner, D. F., Adamson, L. B., & Bakeman, R. (2006). Child and maternal contributions to shared reading: Effects on language and literacy development. *Journal of Applied Developmental Psychology, 27*(1), 31-41.

Du, Y. (2010). *Serving Library Users from Low-Income Communities: Promoting Digital Literacy to eSociety.* Proceedings from 2010 iConference.

Evans, M. A., Shaw, D., & Bell, M. (2000). Home literacy activities and their influence on early literacy skills. *Canadian Journal of Experimental Psychology, 54*(2),65-75.

Farmer, L., & Stricevic, I. (2011). Using research to promote literacy and reading in libraries: Guidelines for librarians. *International Federation of Library Associations and Institutions Professional Reports, No. 125,* 1 – 25.

Feldman, H. M., Campbell, T. F., Kurs-Lasky, M., Rockette, H. E., Dale, P. S., Colbron, D. K., & Paradise, J. L. (2005). Concurrent and predictive validity of parent reports of childhood language ate ages 2 and 3 years. *Child Development, 76*(4), 856 – 868.

Francis, A. (2009). Thursdays with MacGyver. *Children & Libraries: The Journal of the Association for Library Service to Children, 7*(2), 50 – 52.

Griffin, E. A., & Morrison, F. J. (1997). The unique contribution of home literacy environment to differences in early literacy skills. *Early Child Development and Care, 127*(1), 233-243.

Hindman, A. H., Connor, C. M., Jewkes, A. M., & Morrison, F. J. (2008). Untangling the effects of shared book reading: Multiple factors and their associations with preschool literacy outcomes. *Early Childhood Research Quarterly, 23*, 330-350.

Jones, S. (2011). Mapping the landscape: Gender and the writing classroom. *Journal of Writing Research*, *3*(3), 161 – 179.

Justice, L. M., Pullen, P. C., & Pence, K. (2008). Influence of verbal and nonverbal references to print on preschooler's visual attention to print during storybook reading. *Developmental Psychology, 44*(3), 855 – 866.

Kraaykamp, G. (2003). Literary socialization and reading preferences. Effects of parents, the library, and the school. *Poetics, 31,* 235 – 257.

Logan, S., & Johnston, R. (2009). Gender differences in reading ability and attitudes: Examining where these differences lie. *Journal of Research in Reading, 32*(2), 199 – 214.

Mathews, J.S., Ponitz, C. C., & Morrison, F. J. (2009) Early gender difference in self-regulation and academic achievement. *Journal of Educational Psychology, 101*(3), 689 – 704.

Melhuish, E. C., Phan, M. B., Sylva, K., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2008). Effects of the home learning environment and preschool center experience upon literacy and numeracy development in early primary school. *Journal of Social Issues, 64*(1), 95-114.

Peterson, S. S., & Par, J. M. (2012). Gender and literacy issues and research: Placing the spotlight on writing. *Journal of Writing Research, 3*(3), 151 – 161.

Razza, R., Martin, A., & Brooks-Gunn, J. (2010). Associations among family environment, sustained attention, and school readiness for low-income children. *Developmental Psychology, 46*(6), 1528 – 1542.

Sainsbury, M., & Schagen, I. (2004). Attitudes to reading at ages nine and eleven. *Journal of Research in Reading, 27*(4), 373 – 386.

Shealy, S. E., & Cook, S. A. (2009). Shared book reading: When and how questions affect young children's word learning. *Journal of Educational Psychology, 101*(2), 294 – 304.

Tracey, D. H., & Young, J. W. (2002). Mothers helping behaviors during children's at-home oral-reading practice: Effects of children's reading ability, children's gender, and mothers' educational level. *Journal of Educational Psychology, 94*(4), 729 – 737.

Ward. A., & Wason-Ellam, L. (2005). Reading beyond school: Literacies in a neighbourhood library. *Canadian Journal of Education, 28*(1/2), 92 – 108.

Whitehurst, G. J., Crone, D. A., Zevenbergen, A. A., Shultz, M. D., Velting, O. N., & Fishel, J. E. (1999). Outcomes of an emergent literacy intervention from Head Start through second grade. *Journal of Educational Psychology, 91*(2), 261 – 272.

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., & Caulfield, M. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24*(4), 552 – 559.

Vannobbergen, B., Daems, M., & Van Tilburg, S. (2009). Bookbabies, their parents and the library: An evaluation of a Flemish reading programme in families with young children. *Educational Review, 61*(3), 277 – 287.